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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,872	06/05/2001	Atul Puri	2001-0161A	6019

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EXAMINER	
WONG, ALLEN C	
ART UNIT	**PAPER NUMBER**
2621	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/874,872	PURI ET AL.	
	Examiner	Art Unit	
	Allen Wong	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-16,18-22 and 27-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-16,18-22 and 27-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/30/07 have been fully read and considered but they are not persuasive.

Regarding pages 11-12 of applicant's remarks, applicant argues that the combination of Lee and Lennon is not combinable. The examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Lee and Lennon, as a whole, for efficiently, precisely encode spatial and temporal video data while maintaining high image quality, as disclosed in Lennon's column 3, lines 50-57.

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding lines 12-15 on page 13 of applicant's remarks, applicant asserts that Lennon does not disclose the predefined model selected from a plurality of predefined models, and each encoder being associated with one predefined model of the plurality of predefined encoder models. The examiner respectfully disagrees. In column 13, lines 49-65, Lennon teaches the regions can be separately coded in that there are model parameters for each separately coded region for a plurality of coded regions. Thus, Lennon discloses the predefined model selected from a plurality of predefined models, and each encoder being associated with one predefined model of the plurality of predefined encoder models. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Lee and Lennon, as a whole, for efficiently, precisely encode spatial and temporal video data while maintaining high image quality, as disclosed in Lennon's column 3, lines 50-57.

Regarding lines 10-12 on page 15 of applicant's remarks, applicant states that there are no cited benefits in Lennon. The examiner respectfully disagrees. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Lee and Lennon, as a whole, for efficiently, precisely encode spatial and temporal video data while maintaining high image quality, as disclosed in Lennon's column 3, lines 50-57.

Regarding lines 13-15 on page 15 of applicant's remarks, applicant states that the references are not combinable. The examiner respectfully disagrees. In response to applicant's argument that Lee and Lennon is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Lee and Lennon, as a whole, for efficiently, precisely encode spatial and temporal video data while maintaining high image quality, as disclosed in Lennon's column 3, lines 50-57. Both Lee and Lennon are reasonably combinable because both teachings are analogously relevant to the MPEG video encoding environment.

Regarding lines 1-3 and 17-20 on page 16 of applicant's remarks, applicant states that "routing each of at least two video content portions... assigned to each of the at least two video content portions" is not disclosed in the Office Action. The examiner respectfully disagrees. In column 42, lines 47-61, Lee discloses each video object has an arbitrary shape, and that each video object is predefined according to its shape.

Thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask. In figure 27A, Lee discloses there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970, and that Lee's figure 35 discloses the frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b. Thus, Lee discloses "routing each of at least two video content portions... assigned to each of the at least two video content portions".

Regarding lines 5-7 and 12-16 on page 17 of applicant's remarks, applicant contends that "comparing descriptors associated with each of the at least two video content portions with corresponding stored model descriptors from a plurality of predefined content models". The examiner respectfully disagrees. In column 51, lines 4-59, Lee discloses the plural flags can help the determination of the video portions of the video content. And in column 50, lines 18-41, Lee discloses the comparison of the frames with the shape of the first frame that comprises its respective video portions and the shape of the second frame that contains its respective video portions. Thus, Lee discloses "comparing descriptors associated with each of the at least two video content portions with corresponding stored model descriptors from a plurality of predefined content models". Thus, claim 1 is rejected for reasons as stated above and in the rejection below.

Regarding lines 17-19 and 21-23 on page 18 of applicant's remarks, applicant states that Lee does not disclose the step of each of the plurality of encoders being

associated with one of the plurality of predefined encoder models. The examiner respectfully disagrees. In figure 33 and col.43, ln.10-15, Lee discloses the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508. And in figure 36, Lee discloses the coder shown is used to encode the video portions. Thus, Lee discloses the step of each of the plurality of encoders being associated with one of the plurality of predefined encoder models. Claim 9 is rejected for similar reasons as claim 1.

Claims 13, 15, 18 and 21 are rejected for similar reasons as stated above and in the rejection below for claims 1 and 9. Claims 2-5, 7, 8, 27 and 30 are rejected for similar reasons as claim 1. Claims 10-12 are rejected for similar reasons as claim 9. Claims 14 and 31 are rejected for similar reasons as claim 13. Claims 16 and 33 are rejected for similar reasons as claim 15. Claims 19, 20, 28 and 34 are rejected for similar reasons as claim 18. Claims 22, 29 and 35 are rejected for similar reasons as claim 21.

In conclusion, the rejection of the claims is maintained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-5, 7-16, 18-22 and 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (5,748,789) in view of Lennon (6,516,090).

Regarding claims 1, 9, 13, 15, 18 and 21, Lee discloses a method of encoding video content, the method comprising:

identifying video subsegments and regions of interest within at least two video portions from the video content (fig.33, element 1502, col.42, ln.34-46, and fig.35, note video object information is extracted and segmented from the input video sequence, and segments and subsegments of the regions of interest are identified, and in fig.35 discloses extracting multiple video objects 1540, 1542 and 1544b; fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b);

assigning a predefined encoder model to each at least two video portion according to a characteristic of each of the at least two video portions, the predefined encoder model being chosen from a plurality of predefined models or a generic model (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b);

encoding each of the at least two video portions associated with the generic encoder model with a generic encoder (fig.33 and col.42, ln.62-65; note object coders

1504-1508 encode video portions associated with the generic model; and fig.36, note the coder shown is used to encode the video portions); and

encoding each of the at least two video portions associated with the plurality of predefined encoder models with an encoder chosen from a plurality of encoders, each of the plurality of encoders being associated with one of the plurality of predefined models (fig.33 and col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508; and fig.36, note the coder shown is used to encode the video portions), wherein

the assigning a predefined encoder model to each of the at least two video portions according to a characteristic of each of the at least two video portions further comprises:

comparing first descriptors associated with the at least two video portions and second descriptors associated with the subsegments and the regions of interest with corresponding stored model descriptors from a plurality of predefined content models (col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content; col.50, ln.18-41, Lee discloses the comparison of the frames, in particular, the comparison is done with the shape of the first frame that contains its respective video portions and the shape of the second frame that contains its respective video portions), and

assigning each of the at least two video content portions to a respective best content model based on the comparing of the first and the second descriptors (col.50, ln.27-37, the error computed from the inter-frame shape coding is then applied to assign

the best content model based on the interframe comparison of the shapes between the first and second frame data).

Lee does not specifically disclose the predefined encoder model selected from a plurality of predefined encoder models, and each encoder being associated with one predefined model of the plurality of predefined models. However, Lennon teaches the predefined model selected from a plurality of predefined models, and each encoder being associated with one predefined model of the plurality of predefined encoder models (col.13, ln.49-65; Lennon discloses that the regions can be separately coded where there are model parameters for each separately coded region). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Lee and Lennon, as a whole, for efficiently, precisely encode spatial and temporal video data while maintaining high image quality (col.3, ln.50-57).

Note claims 5, 7-8, 14, 16, 19, 20, 22 and 30-35 have similar corresponding elements.

Regarding claims 2-4, 10 and 12, Lee discloses further comprising:

producing descriptors associated with the video portions of the video content (col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content); and

producing descriptors associated with the video subsegments and regions of interest (col.51, ln.4-59; note there are plural flags that can aid the determination of the video subsegments of the video content).

Regarding claim 11, Lee discloses further comprising:

encoding the descriptors associated with the video portions, video subsegmencs and regions of interest (fig.33, note the descriptors are encoded along with the video object information by encoders 1504-1508).

Regarding claims 27-29, Lee discloses a coded bitstream having portions of the bitstream encoded using different encoders according to encoder models associated with a subject matter of each portion of the bitstream, the coded bitstream encoded according to the method of claims 1, 18 and 21, respectively (fig.33 and col.42, ln.62-65; note different video object coders 1504-1508 encode video portions associated with the generic model; col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural different video object encoders 1504-1508).

Lee does not specifically disclose the predefined model selected from a plurality of predefined models, and each encoder being associated with one predefined model of the plurality of predefined models. However, Lennon teaches the predefined model selected from a plurality of predefined models, and each encoder being associated with one predefined model of the plurality of predefined models (col.13, ln.49-65; Lennon discloses that the regions can be separately coded where there are model parameters for each separately coded region). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Lee and Lennon, as a whole, for efficiently, precisely encode spatial and temporal video data while maintaining high image quality (col.3, ln.50-57).

Conclusion

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Groody can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Allen Wong
Primary Examiner
Art Unit 2621

AW
4/16/07